



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF
STATE PLANNING COORDINATION

August 18, 2005

Mr. John O. Murray
Kercher Engineering, Inc.
413 East Market Street
Georgetown, DE 19947

RE: PLUS review – PLUS 2005-07-04; Deer Creek

Dear Mr. Murray:

Thank you for meeting with State agency planners on August 3, 2005 to discuss the proposed plans for the Deer Creek project to be located on the north side of Sussex County Road 224, west of Route 113, south of Lincoln.

According to the information received, you are seeking site plan approval for 79 residential units on 93.58 acres in a Level 4 area.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as Sussex County is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.

Executive Summary

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The full text of this letter represents the official state response to this project. ***Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.***

State Strategies/Project Location

- This project is proposed for an Investment Level 4 area according to the 2004 *Strategies for State Policies and Spending*. This project is also located outside of a designated growth area in relevant municipal and county certified Comprehensive Plans. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4 areas.

Natural and Cultural Resources

- There is a known prehistoric archaeological site on the parcel.
- This project impacts all three layers of the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61.
- As proposed, this project would remove and fragment forest that is part of a large contiguous forest tract and may reduce the habitat value of the entire forest stretch.
- More than half of the proposed area falls within an area of excellent ground-water recharge.
- Forest on the site, and the existing riparian buffer, should be preserved.
- Portions of the site are within a State Resource Area and adjacent to Redden State Forest.
- There are records of an Atlantic white cedar swamp just downstream that could be detrimentally affected by run-off from the development, especially if adequate buffers are not maintained along the riparian area.
- The site is located adjacent to established agricultural preservation districts and, if developed, must comply with both the 50-foot setback and 300-foot notification zone requirements.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: Ann Marie Townshend 739-3090

This project represents a major land development that will result in 79 residential units in an Investment Level 4 area according to the 2004 *Strategies for State Policies and Spending*. This project is also located outside of a designated growth area in relevant municipal and county certified comprehensive plans. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4 areas. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved.

From a fiscal responsibility perspective, development of this site is likewise inappropriate. The cost of providing services to development in rural areas is an inefficient and wasteful use of the State's fiscal resources. The project as proposed is likely to bring nearly 200 new residents to an area where the State has no plans to invest in infrastructure upgrades or additional services. These residents will need access to such services and infrastructure as schools, police, and transportation. To provide some examples, the State government funds 100% of road maintenance and drainage improvements for the transportation system, 100% of school transportation and paratransit services, up to 80% of school construction costs, and about 90% of the cost of police protection in the unincorporated portion of Sussex County where this development is proposed. Over the longer term, the unseen negative ramifications of this development will become even more evident as the community matures and the cost of maintaining infrastructure and providing services increases.

Because the development is inconsistent with the *Strategies for State Policies and Spending*, the State is opposed to this proposed subdivision.

Division of Historic and Cultural Affairs (DHCA) – Contact: Alice Guerrant 739-5685

The Division of Historic and Cultural Affairs does approve of this development because it is in State Investment Level 4 and will result in a loss of the historic agricultural landscape and of archaeological sites through destruction, and will introduce adverse noise effects on nearby late-19th-century and early-20th-century historic properties through increased traffic.

There is a known prehistoric archaeological site within the parcel (S-7979) and a medium potential for others in some areas. Beers Atlas of 1868 shows a school house within the parcel along the road to the east. The USGS 1918 Cedar Creek quadrangle shows a building about midway in the parcel on the road. There may be archaeological resources related to these buildings.

If this project proceeds, the DHCA requests that the owner/developer allow them the opportunity to check for additional sites and learn something about their location and character prior to any ground-disturbing activity.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

This development is proposed for an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies for State Policies and Spending* have deemed the type of development being proposed inappropriate for this area. As part of our commitment to support the *Strategies*, DelDOT refrains from participating in the cost of any road improvements needed to support this development and is opposed to any road improvements that will substantially increase the transportation system capacity in this area. DelDOT will only support taking the steps necessary to preserve the existing

transportation infrastructure and make whatever safety and drainage related improvements are deemed appropriate and necessary. The intent is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in Level 4 Areas while avoiding the creation of isolated development areas that cannot be served effectively or efficiently by public transportation, emergency responders, and other public services.

DelDOT strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in approved Comprehensive Plans. They encourage the use of transfer of development rights where this growth management tool is available.

If this development proposal is approved, notwithstanding inconsistencies with the relevant plans and policies, DelDOT will provide technical review and comments.

**The Department of Natural Resources and Environmental Control – Contact:
Kevin Coyle 739-9071**

Investment Level 4 Policy Statement

This project is proposed for an Investment Level 4 area as defined by the *Strategies for State Policies and Spending* and is also located outside of a designated growth area in the relevant municipal and county certified comprehensive plans. According to the *Strategies* this project is inappropriate in this location. In Investment Level 4 areas, the State's investments and policies, from DNREC's perspective, should retain the rural landscape and preserve open spaces and farmlands. Open space investments should emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. Open space investments should also provide for recreational activities, while helping to define growth areas. Additional state investments in water and wastewater systems should be limited to existing or imminent public health, safety or environmental risks only, with little provision for additional capacity to accommodate further development.

With continued development in Investment Level 4 areas, the State will have a difficult, if not impossible, time attaining water quality (e.g., TMDLs) and air quality (e.g., non-attainment areas for ozone and fine particulates) goals. Present and future investments in green infrastructure, as defined in Governor Minner's Executive Order No. 61, will be threatened. DNREC strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in certified Comprehensive Plans. We encourage the use of transfer of development rights where this growth management tool is available.

This particular development certainly compromises the integrity of the State Strategies and the preservation goals inherent in many of DNREC's programs. Of particular

concern are: the project impacts all three layers of the Green Infrastructure map (cropland, forest, and natural resources), the project's proximity to an excellent recharge area, potential impacts to rare species, and loss/fragmentation of 11 out of 28 acres of forest. While mitigating measures such as conservation design, central wastewater systems instead of individual on-site septic systems, and other best management practices may help mitigate impacts from this project, not doing the project at all is the best avenue for avoiding negative impacts. As such, this project will receive no financial, technical or other support of any kind from DNREC. Any required permits or other authorizations for this project shall be considered in light of the project's conflict with our State growth strategies.

Green Infrastructure

Portions or all of the lands associated with this proposal are within the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61 that represents a network of ecologically important natural resource lands of special state conservation interest.

Green infrastructure is defined as Delaware's natural life support system of parks and preserves, woodlands and wildlife areas, wetlands and waterways, productive agricultural and forest land, greenways, cultural, historic and recreational sites and other natural areas all with conservation value. Preserving Delaware's Green Infrastructure network will support and enhance biodiversity and functional ecosystems, protect native plant and animal species, improve air and water quality, prevent flooding, lessen the disruption to natural landscapes, provide opportunities for profitable farming and forestry enterprises, limit invasive species, and foster ecotourism.

Voluntary stewardship by private landowners is essential to green infrastructure conservation in Delaware, since approximately 80 percent of the State's land base is in private hands. It is in that spirit of stewardship that the Department appeals to the landowner and development team to protect sensitive resources through an appropriate site design.

Soils

According to the Sussex County soil survey mapping, Evesboro, Woodstown and Johnston soils were mapped in the immediate vicinity of the proposed project. Johnston was the only soil indicative of wetlands (hydric).

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine wetlands on this parcel.

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

It should also be noted that this parcel borders or contains headwater or near headwater riparian wetlands associated with Cedar Creek which eventually drain to the environmentally-sensitive Mispillion River subwatershed of the Delaware Bay. Headwater riparian wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system and/or water bodies further downstream. Since such streams are a major avenue for nutrient-laden stormwater and sediment runoff, their protection deserves the highest priority. **In recognition of this concern, the Department strongly recommends that the applicant preserve the existing riparian buffer (where it still exists) in its entirety. Otherwise – as mentioned previously - a 100-foot buffer width is considered the minimum acceptable distance from all wetlands and water bodies (including ditches).** In cases where natural buffer vegetation has been removed or reduced by past development or farming activities, the developer is encouraged to restore/establish to said buffer width or greater with native herbaceous and/or woody vegetation.

Wetland Permitting Information

Impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

Because there is strong evidence that federally regulated wetlands exist on site, a wetland delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified Corps of Engineers through the Jurisdictional Determination process.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-4691 to schedule a meeting.

Impervious Cover

Since residential development significantly increases the amount of impervious cover - leading to large volumes of contaminant-laden runoff which ultimately drain into streams or waterways - the applicant is strongly urged to pursue both natural and constructed Best Management Practices (BMPs) to reduce such impacts. Reducing the amount of impervious surfaces by planting more trees and/or the use of pervious paving surfaces ("pavers") in lieu of asphalt or concrete, are examples of ways to reduce such impacts. Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline.

TMDLs

A Total Maximum Daily Load (TMDL) is the maximum level of pollution for which a water quality limited water body can assimilate without compromising use and recreational goals such as swimming, fishing, drinking water, and shell fish harvesting.

Although TMDLs as a "pollution runoff mitigation strategy" to reduce nutrient loading have not yet been developed for the Cedar Creek and Mispillion River subwatersheds to date, work is continuing on their development and they should be completed by December 2006.

Therefore, until the specified TMDL reductions and pollution control strategies are adopted, it shall be incumbent upon the developer to employ best available technologies (BATS) and/or best management practices (BMPs) as "methodological mitigative strategies" to reduce degradative impacts that might be associated with proposed project.

Reducing imperviousness, planting/preservation of trees, and maintaining 100-foot minimum upland buffers from wetlands/streams - are some examples of proactive mitigative strategies that will help reduce excessive nutrient runoff and its impacts on water quality, while ensuring State compliance with imminent Federal TMDL regulatory requirements.

Water Resource Protection Areas

The DNREC Water Supply Section has determined that more than half of the proposed area falls within an area of excellent ground-water recharge (see following map and attached map).

According to the State law that created the Source Water Protection Program, county and municipal governments with more than 2,000 residents will be required to enact ordinances to protect Water Resource Protection Areas. Municipalities with fewer than 2,000 residents are encouraged to enact such ordinances. The following language has been excerpted from the Source Water Protection Guidance Manual for Local Governments, Supplement 1 - Ground-Water Recharge Design Methodology. While the

local ordinances may not yet be in place, the developer may find the language useful in modifying the site plan to protect water resources.

Water Resource Protection Areas (WRPAs) are defined as (1) surface water areas such as floodplains, limestone aquifers, and reservoir watersheds, (2) wellhead areas, or (3) excellent recharge areas. The purpose of an impervious cover threshold is to minimize loss of recharge and protect the quality and quantity of ground and surface water supplies in WRPAs.

New development in WRPAs may exceed the 20% impervious cover threshold, but be no more than 50% impervious, provided the applicant submits an environmental assessment report recommending a climatic water budget and facilities to augment recharge. The environmental assessment must document that post-development recharge will be no less than predevelopment recharge when computed on an annual basis.

Commonly, the applicant offsets the loss of recharge due to impervious cover by constructing recharge basins that convey relatively pure rooftop runoff for infiltration to ground water.

The Department recommends the following (ranked in order of preference):

- 1) Preserve WRPAs as open space and parks by acquisition or conservation easement.
- 2) Limit impervious cover of new development to 20% by right within WRPAs.
- 3) Allow impervious cover of new development to exceed 20% within WRPAs (but no more than 50% impervious) provided the applicant develops recharge facilities that directly infiltrate rooftop runoff.
- 4) Allow impervious cover of new development to exceed 20% within WRPAs (but no more than 50% impervious) provided the applicant develops recharge facilities that infiltrate stormwater runoff from forested and/or grassed surfaces with pretreatment.

The DNREC Water Supply Section recommends that that portion of the new development within the excellent recharge area not exceed 20% impervious cover. The site plan total impervious cover is proposed as 10.5%. This number should be clarified as to whether or not the wetlands area was considered in part of the calculation. The area in the excellent recharge area has the potential to exceed this threshold based upon the site plan. The excellent recharge area is centrally located in the parcel and would be affected by any development in the area.

Further, some allowance for augmenting ground-water recharge should be considered since the impervious cover could exceed 20% in the excellent recharge area but is less than 50% of that portion of the parcel within this area. The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies. This can be achieved by using a rooftop runoff system for each of the structures constructed.

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DNREC Water Supply strongly recommends adherence to the impervious cover recommendations since this will directly affect any onsite well drawing water from the unconfined aquifer.

The proposed development states that each house will have its own well and septic system. The open space for the development is not located on the excellent recharge area. Relocating the open space to the excellent recharge area will allow for clean recharge.

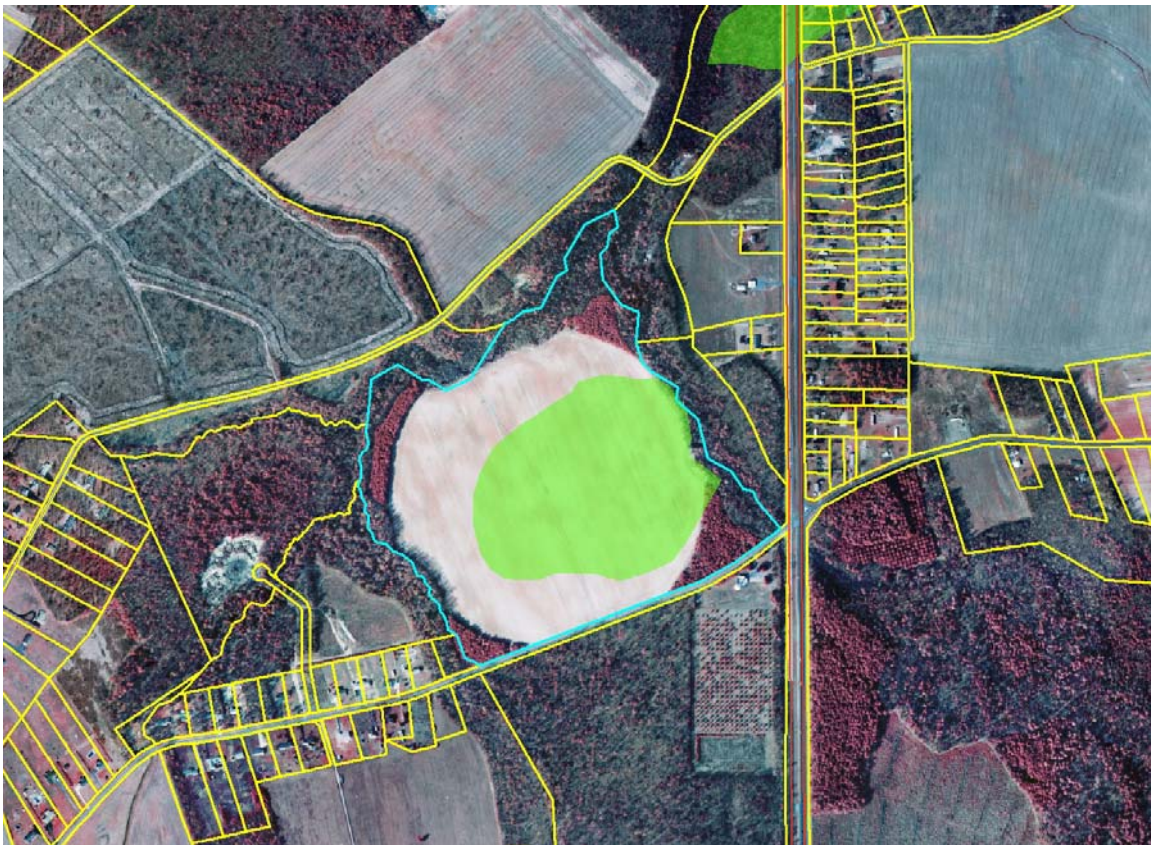
For more information, refer to:

Source Water Protection Guidance Manual for the Local Governments of Delaware at <http://www.wr.udel.edu/swaphome/phase2/SWPguidancemanual.html>

and

Ground-Water Recharge Design Methodology at http://www.wr.udel.edu/swaphome/phase2/Publications/swapp_manual_final/swapp_guidance_manual_supp_1_2005_05_02.pdf

Map of Deer Creek showing excellent recharge in green and the tax parcel impacted in light blue.



Water Supply

The project information sheets state that individual on-site wells will be used to provide water for the proposed project. Our records indicate that the project is not located in an area where public water service is available. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through **Sussex Conservation District**. Contact Jessica Watson at (302) 856-7219 for details regarding submittal requirements and fees.

As of April 11, 2005, stormwater best management practices must also consider water quality as well as quantity in impaired water bodies.

Drainage

The Drainage Section requests all existing ditches on the property be checked for function and cleaned if needed prior to the construction of homes. Wetland permits may be required before cleaning ditches.

The Drainage Section requests that all precautions be taken to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water.

The Drainage Section strongly recommends any drainage conveyance between two parcels within a subdivision be dedicated as a drainage easement and such easement be designated as passive open space, not owned by individual landowners. The easement should be of sufficient width to allow for future drainage maintenance as described below.

- Along an open ditch or swale, the Drainage Section recommends a maintenance equipment zone of 25 feet measured from the top of bank on the maintenance side, and a 10-foot setback zone measured from top of bank on the non-maintenance side. These zones should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be native species spaced to allow for drainage maintenance at maturity. Trees should not be planted within 5 feet of the top of ditch to avoid future blockages from roots.
- Along a stormwater pipe, the Drainage Section recommends a maintenance equipment zone of 15 feet on each side of the pipe as measured from the pipe centerline. This zone should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be spaced to allow for drainage maintenance at maturity.

The Drainage Section recommends any drainage/utility easement owned by an individual landowner should not have structures, decks, buildings, sheds, kennels, fences or trees within the drainage easement to allow for future drainage maintenance.

Forests

Forested areas are present according to 2002 aerial photos. The developer is strongly encouraged to enhance forested resources on site. There are numerous opportunities on this site to improve the extent and function of forested buffers, particularly near Cedar Creek. By enhancing the riparian corridor wildlife could utilize the area and will also provide recreational opportunities for residents. Wildlife such as deer (as the subdivision name would suggest) would most likely be abundant in areas where forest were present. Interpretive signs could be placed at reforestation sites describing the importance of vegetative restoration for supporting wildlife populations and enhancing Cedar Creek.

The developer should seriously consider placing the forest into a permanent conservation easement or other binding protection as the forested area is extremely beneficial to the

region and to Delaware's Green Infrastructure. These areas should be clearly marked and delineated so that residents understand their importance and so that homeowner activities do not infringe upon these areas.

Open Space

PLUS materials indicate that 5.65 acres are proposed for open space. In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Once established, these ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces.

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

Habitat/State Resource Area

Portions of this parcel lie within a proposed mapped State Resource Area and are adjacent to Redden State Forest. State Resource Areas include lands held in conservation by various groups as well as lands targeted for conservation and preservation efforts. These areas are thought to have particular conservation value. The wetlands and woodlands along this tract provide valuable wildlife corridors connecting to vast areas of conservation land. Therefore, efforts should be made to reduce the amount of deforestation and encroachment onto the natural environment. Further, the developer should place all forested and wetland areas into permanent conservation easement.

Rare Species

The federally listed swamp pink (*Helonias bullata*) is located both upstream and downstream of this site and the likelihood that it occurs within project boundaries is high. This rare plant typically occurs in Atlantic white cedar and maple/gum swamps in the Coastal Plain and appears to be very sensitive to sedimentation. The project site should be surveyed for the presence of this federally protected plant. Please contact the program botanist, Bill McAvoy, at (302) 653-2880 to set up a site visit. His observations would allow then to make more informed comments and allow the applicant the opportunity to avoid impacts to this rare species. Please note for your permitting purposes that they have copied the USFWS regarding the potential for swamp pink to occur at this project site.

DNREC also has records of an Atlantic white cedar swamp just downstream that could be detrimentally affected by run-off from this development if adequate (at least 100 feet, preferably 300 feet) forested buffers are not maintained along the riparian area in the rear of the property. This community typically harbors species of rare plants and animals and

requires a specific hydrology to exist. It is also very susceptible to sedimentation. Please note for your permitting purposes that because of the presence of this species and other

rare species that are downstream from this site, the riparian area lies within a State Natural Heritage Site. However, it does not lie within a Delaware National Estuarine Research Reserve. This is one of the criteria used to determine the presence of Critical Resource Waters. The final decision regarding Critical Resource Waters – if this is an issue – will be made by the U.S. Army Corps of Engineers (ACOE). The information above will aid the ACOE in their determination

There are also records of *Scincella lateralis* (ground skink or little brown skink) in the surrounding forest and it may be present within the project area as well. This state rare reptile prefers deciduous to mixed deciduous-coniferous woodlands but may also be found in dry fields and small, piney woodlots. It utilizes rotting logs and stumps for egg deposition and spends most of its time on the ground within leaves, thick grass or under logs.

Potential Hunting Issue

Because the project parcel is part of a larger forest block, legal hunting activities may take place on adjacent properties. Hunting within 100 yards of a dwelling is prohibited and the applicant may want to contact adjacent landowners to determine if this is going to be an issue. In effect, the adjacent landowner will be losing 100 yards of their property for hunting if there is not a buffer between lot lines and the adjacent property line.

Nuisance Waterfowl

Stormwater management ponds that remain in the site plan may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. DNREC recommends native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (50 feet) around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Solid Waste

Each Delaware household generates approximately 3,600 pounds of solid waste per year. On average, each new house constructed generates an additional 10,000 pounds of construction waste. Due to Delaware's present rate of growth and the impact that growth will have on the state's existing landfill capacity, the applicant is requested to be aware of the impact this project will have on the State's limited landfill resources and, to the extent possible, take steps to minimize the amount of construction waste associated with this development.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 6.1 tons (12,125.7 pounds) per year of VOC (volatile organic compounds), 5.0 tons (10,039.2 pounds) per year of NOx (nitrogen oxides), 3.7 tons (7,407.1 pounds) per year of SO₂ (sulfur dioxide), 0.3 ton (659.4 pounds) per year of fine particulates and 507.1 tons (1,014,297.3 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 2.4 tons (4,890.8 pounds) per year of VOC (volatile organic compounds), 0.3 ton (538.1 pounds) per year of NOx (nitrogen oxides), 0.2 ton (446.6 pounds) per year of SO₂ (sulfur dioxide), 0.3 ton (576.3 pounds) per year of fine particulates and 9.9 tons (19,826.4 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.0 tons (1,938.4 pounds) per year of NOx (nitrogen oxides), 3.4 tons (6,742.2 pounds) per year of SO₂ (sulfur dioxide) and 497.2 tons (994,471.0 pounds) per year of CO₂ (carbon dioxide).

	VOC	NOx	SO ₂	PM _{2.5}	CO ₂
Mobile	6.1	5.0	3.7	0.3	507.1
Residential	2.4	0.3	0.2	0.3	9.9
Electrical Power		1.0	3.4		497.2
TOTAL	8.5	6.3	7.3	0.6	1014.2

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.0 tons of nitrogen oxides per year and 3.4 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates

into a percent reduction in pollution. Quoting from their webpage,
<http://www.energystar.gov/>:

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment.”

Our energy office in DNREC is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. We highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

State Fire Marshal's Office – Contact: Duane Fox 856-5298

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements:**

- Since the dwellings of the subdivision are proposed to be served by individual on-site wells (No Central Water System), set back and separation requirements will apply.

b. **Accessibility:**

- All premises which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Staytonville Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn

around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.

- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

c. Gas Piping and System Information:

- Provide type of fuel proposed, and show locations of bulk containers on plan.

d. Required Notes:

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Milton Melendez 698-4500

The proposed development is in an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* and the Sussex County Comprehensive Plan do not support this type of isolated development in this area. The intent of these plans is to preserve the agricultural lands, forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. The Department of Agriculture opposes the proposed development which conflicts with the preferred land uses, making it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries - agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern

agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. DDA opposes the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation.

As further example of the conflicts which arise when residential development projects are placed in rural areas, is the fact that this proposed development borders both a State Forest and an established Agricultural Preservation District. The 194-acre Appenzellar tract of the Redden State Forest is to the south of this proposed development. DDA does not support the practice of placing residential developments adjacent to State Forest. Residents often use the forests as dumping grounds and/or private recreation areas in a manner which degrades the natural beauty and resource values.

This site is located adjacent to established agricultural preservation districts. The 454-acre Well/Jones Agricultural Preservation District is adjacent to this proposed development to the north. As such, if developed, both the 50 foot setback and 300 foot notification zone requirements apply. However, we would prefer that these parcel(s) remained in agricultural use. The area is an active and viable agricultural community. The developer will be required to place the below stated deed notice in every new recorded deed located within the whole development. See below:

§ 910. Agricultural use protections.

(a) Normal agricultural uses and activities conducted in a lawful manner are preferred and priority uses and activities in Agricultural Preservation Districts. In order to establish and maintain a preference and priority for such normal agricultural uses and activities and avert and negate complaints arising from normal noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations, land use adjacent to Agricultural Preservation Districts shall be subject to the following restrictions:

(1) For any new subdivision development located in whole or in part within 300 feet of the boundary of an Agricultural Preservation District, the owner of the development shall provide in the deed restrictions and any leases or agreements of sale for any residential lot or dwelling unit the following notice:

"This property is located in the vicinity of an established Agricultural Preservation District in which normal agricultural uses and activities have been afforded the highest priority use status. It can be anticipated that such agricultural uses and activities may now or in the future involve noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations. The use and enjoyment of this property is expressly conditioned on acceptance of any annoyance or inconvenience which may result from such normal agricultural uses and activities."

(2) For any new subdivision development located in whole or in part within 50 feet of the boundary of an Agricultural Preservation District, no improvement requiring an occupancy approval shall be constructed within 50 feet of the boundary of the Agricultural Preservation District.

(b) Normal agricultural uses and activities conducted in accordance with good husbandry and best management practices in Agricultural Preservation Districts shall be deemed protected actions and not subject to any claim or complaint of nuisance, including any such claims under any existing or future county or municipal code or ordinance. In the event a formal complaint alleging nuisance related to normal agricultural uses and activities is filed against an owner of lands located in an Agricultural Preservation District, such owner, upon prevailing in any such action, shall be entitled to recover reasonably incurred costs and expenses related to the defense of any such action, including reasonable attorney's fees. (*68 Del. Laws, c. 118, § 2.*)

The Delaware Department of Agriculture supports growth which expands and builds on existing urban areas and growth zones in approved State, county and local plans. Where additional land preservation can occur through the use of transfer of development rights, and other land use measures, we will support these efforts and work with developers to implement these measures. If this project is approved we will work with the developers to minimize impacts to the agricultural and forestry industries.

Public Service Commission - Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Delaware State Housing Authority – Contact Karen Horton 739-4263

This proposal is to develop 79 units on 93.5 acres located on the north side of Staytonville Road, west of US 113, south of Lincoln, and between Cedar Creek and one of its tributaries. According to the *State Strategies Map*, the proposal is located in an Investment Level 4. As a general planning practice, DSHA encourages residential development in areas where residents will have proximity to services, markets, and employment opportunities such as Investment Level 1 and 2 areas outlined in the State Strategies Map. The proposal is located in an area targeted for agricultural and natural resource protection, and therefore inconsistent with where the State would like to see new residential development.

Sussex County – Contact: Richard Kautz 855-7878

The Sussex County Engineer Comments:

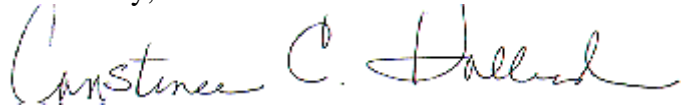
Individual on-site wastewater systems are proposed to serve the subdivision. The proposed project is not within any Sussex County Planning Area boundary. It is not in an area where Sussex County expects to provide sewer service. Sussex County has no objection to the project being served by individual on-site systems.

For questions regarding these comments, contact Rob Davis, Sussex County Engineering Department at (302) 855-7820.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

A handwritten signature in blue ink that reads "Constance C. Holland". The signature is fluid and cursive, with the first name "Constance" being the most prominent part.

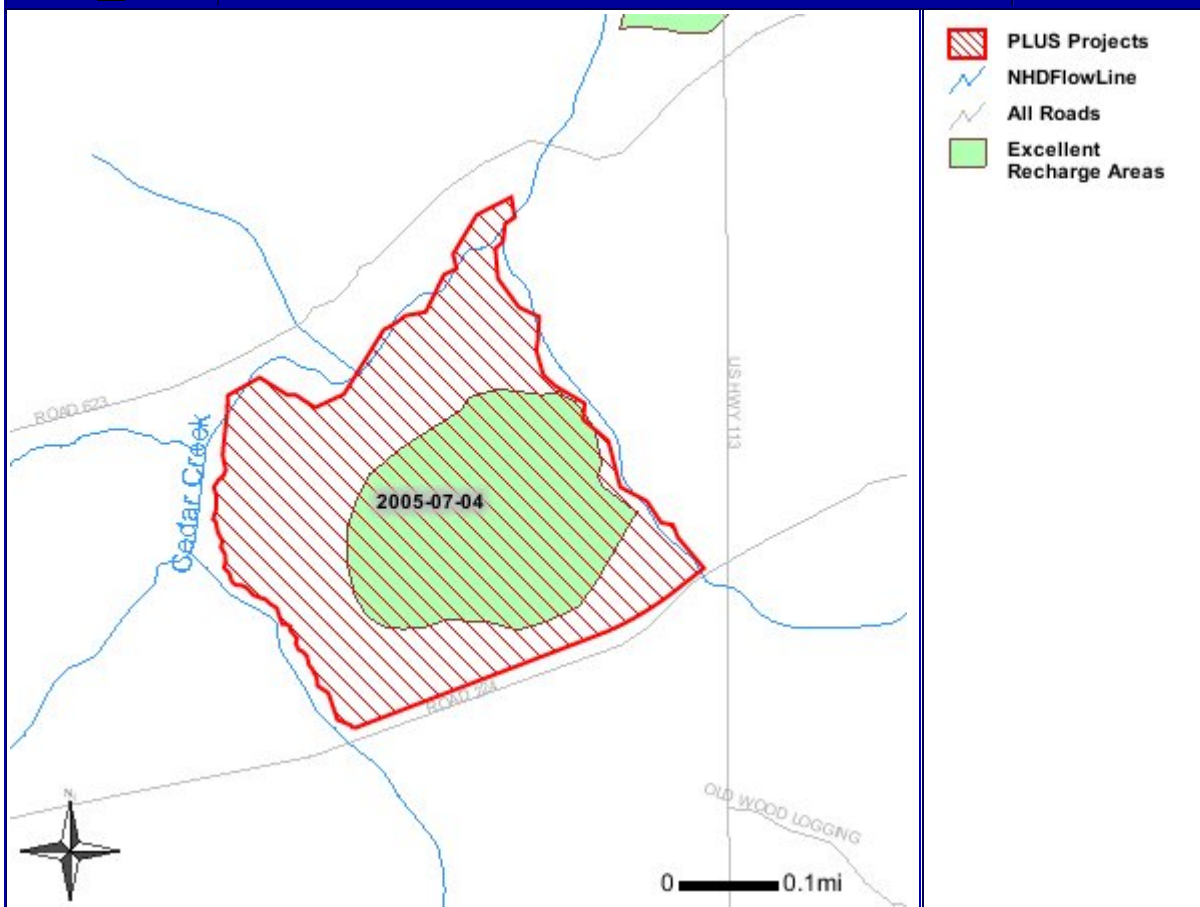
Constance C. Holland, AICP
Director

CC: Sussex County



Deer Creek

2005-07-04



This map was produced by the Delaware Department of Natural Resources and Environmental Control.

